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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,575	11/12/2003	Albert A. Talin	CR00-037	8258

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EXAMINER

WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/713,575

Applicant(s)

TALIN ET AL.

Examiner

Harry D. Wilkins, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. Pursuant to the guidelines set forth in MPEP 609.02, the information submitted on considered PTO-1449(s) in the parent application, 09/942,496, have been considered in this application. However, these references, unless cited by the Examiner, will not appear on the face of any patent granted on this application unless cited on a new PTO-1449 by Applicant.
2. Further, it is noted that a petition to withdraw the parent application from issue was filed on 13 November 2003, and stated the reason for doing so was "to permit consideration of an information disclosure statement under 37 CFR 1.97 in a continuing application". It is noted that no such information disclosure statement has been filed in this continuing application.

Claim Objections

3. Claims 10 and 19 are objected to because of the following informalities:
 - Claim 10, a period should be added at the end of the claim,
 - Claim 19, lines 3 and 4, each instance of "hundreds" should be changed to "hundred".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 and 9-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mancevski (6,146,227), and further in view of Bradley (6,346,182).

Mancevski teaches a method of forming a nano-supported catalyst on a substrate, comprising:

- configuring a substrate with an electrode (col. 9, lines 17-25: "electrochemical plating" and "substrate"...wherein electrochemical implies that an electrode is present);
- applying a bias voltage to said electrode such that a nano-supported catalyst is at least partly formed on said substrate at said electrode (col. 7, line 64 to col. 8, line 17), wherein said nano-supported catalyst has an active catalytic particle with at least one dimension greater than $1/10^{\text{th}}$ of a nanometer and less than about 500 nanometers (col. 6, line 44: "diameters as small as 10 nm"), and
- conducting a chemical reaction process to grow at least one nanotube on said nano-supported catalyst (col. 9, lines 36-40).

Mancevski fails to specifically teach immersing said substrate with said electrode into a solvent containing a first metal salt and a second metal salt, wherein said first metal salt and said second metal are soluble in said solvent.

Bradley teaches immersing said substrate with said electrode into a solvent containing a first metal salt (col. 8, lines 8-64: "alumina" and col. 9, lines 21-35: "salts") and a second metal salt (col. 7, lines 48-65 and col. 9, lines 10-15: "preferably a salt or

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salts”), wherein said first metal salt and said second metal are soluble in said solvent (col. 8, lines 64-67).

Claims 1 and 9 are rejected because it would have been obvious and within the ordinary skill in the art at the time the invention was made to have modified the Mancevski invention to use two salts as taught by Bradley because Bradley teaches that the catalyst support is derived from the first salt (col. 8, lines 8-64: “alumina” and col. 9, lines 21-35: “salts”) and the catalyst is derived from the second salt (col. 7, lines 48-65 and col. 9, lines 10-15: “preferably a salt or salts”), which allows for a high surface area catalyst to efficiently catalyst activity (Figs. 5 and 6, graph “d”).

Claims 2 and 12 are rejected because Mancevski teach that said active catalytic particle is derived from said second metal salt and selected from iron, cobalt or nickel (col. 8, lines 26-26 and 45-52).

Claims 3 and 16 are rejected because it would have been obvious and within the ordinary skill in the art at the time the invention was made to have modified the Mancevski invention to use the metal oxide support such as alumina derived from the first metal salt as taught by Bradley because Bradley teaches the use of an alumina support (col. 8, line 33) which allows for high surface area application of the catalyst further enhancing the efficiency of the catalyst.

Claim 10 is rejected because Mancevski teach that said chemical reaction process is chemical vapor deposition (col. 9, lines 8-12).

Claims 11 and 13 are rejected because Mancevski teaches that said nano-supported catalyst has an active catalytic particle with at least one dimension greater

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than about $1/10^{\text{th}}$ of a nanometer and less than about 500 nanometers (col. 6, line 44: "diameters as small as 10 nm").

Claims 14-15 are rejected because it would have been obvious and within the ordinary skill in the art at the time the invention was made to have modified Mancevski to have grown a nanotube in a size of approximately 1-3 nanometers as taught by Bradley because Bradley teaches that the catalyst ranges in size between 0.5 to 100 nm (col. 7, lines 35-36) which easily would have produced a nanotube in Applicant's claimed range, thereby increasing the density and number of nanotubes per unit area.

Claim 17 is rejected because Mancevski teaches that the solvent is selected from alcohol (col. 10, line 10).

Claims 18 and 19 are rejected because Mancevski teaches that the chemical reaction process can be less than 650 degrees C and greater than 500 degrees C (col. 9, lines 51-52).

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Mancevski - Bradley combination as applied to claim 9 above, and further in view of Yamanaka (U.S. 2003/0013280).

The Mancevski - Bradley combination are as applied, argued, and disclosed above and incorporated herein but fail to teach a glass substrate.

Yamanaka teaches the use of a borosilicate glass substrate for use in deposition of nanotubes (. 0014: "nanotube" and . 0024: "borosilicate").

Claim 20 is rejected because it would have been obvious and within the ordinary skill in the art at the time the invention was made to have modified the Mancevski -

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Bradley combination to use the borosilicate glass of Yamanaka because Yamanaka teach that borosilicate glass is used as a low strain point glass substrate (. 0157) which allows for long life after the nanotube deposition.

Double Patenting

7. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

8. Claim 4 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 6,656,339. This is a double patenting rejection.

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-3 and 9-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 8-19 of U.S. Patent No. 6,656,339. Although the conflicting claims are not identical, they are not patentably distinct from each other because the presently claimed invention is fully encompassed by the claims in the '339 patent.

Conclusion

This is a continuation of applicant's earlier Application No. 09/942,496. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

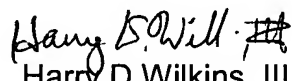
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Harry D Wilkins, III
Primary Examiner
Art Unit 1742

hdw